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Residuals Management Facilities Plan

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RESPONSES TO COMMENTS ON

SITE SCREENING AND

CANDIDATE OPTIONS IDENTIFICATION

February 1988

for a cleaner Boston Harbor

WATER RESOURCES AUTHORITY
MASSACHUSETTS

Black & Veatch
Boston, Massachusetts

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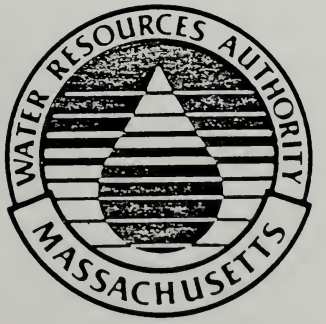

Black & Veatch
Boston, Massachusetts

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1. INTRODUCTION

1.1 Response Document Objectives

Reports describing the site screening and candidate options identification evaluations were submitted to the Massachusetts Environmental Policy Act (MEPA) Unit of the Executive Office of Environmental Affairs (EOEA). Specific reports submitted by the MWRA consisted of:

- Draft Report on Site Screening Analysis, Volume I - Site Screening Methodology, August 1987.
- Draft Report on Site Screening Analysis, Volume II - Site Screening Results, August 1987.
- Draft Report on Candidate Options Identification, August 1987.

During the course of the MEPA public comment period, review comments were received pertaining to the contents of these three reports. These review comments were considered by MEPA as part of the report certification process. Review comments were submitted by a broad range of parties including the U.S. Environmental Protection Agency (EPA), the Massachusetts Department of Environmental Quality Engineering (DEQE), affected towns and cities, and residents.

This document has been prepared by the MWRA to provide information in response to the review comments received by MEPA on the site screening and candidate options reports. Concurrent with the preparation of the review comment response document, the MWRA has completed a refinement of the candidate options that were recommended in August for further evaluation. Section 2 addresses this action. Section 3 of the document responds to the issues presented in the review comments that have program-wide implications. Section 4 contains information on review comments that apply to a specific site under consideration.

Appendix A to the response document identifies the elected officials, agencies and municipal departments that submitted review comments to MEPA. A summary of the number of comments received from residents, by community, is also presented. Appendix B is a copy of the Certificate of the Secretary of Environmental Affairs on the siting and candidate options reports.

1.2 Overview of Residuals Management Facilities Plan (RMFP) Study

Since September 1986, the Massachusetts Water Resources Authority (MWRA) has been engaged in the second phase of a planning effort, which is to lead to the siting, design, and construction of facilities for long-term management of residuals from the Authority's new primary and secondary wastewater treatment facilities on Deer Island. The study is called the Residuals Management Facilities Plan, or RMFP. The current study is being conducted in accordance with a "Special Procedure" that was issued in February 1986 by the Executive Office of Environmental Affairs (EOEA) after the MWRA filed an Environmental Notification Form (ENF) and requested that this project be designated as Major and Complicated by EOEA.

The Special Procedure issued by the MEPA unit of EOEA called for independent analyses of technologies, transportation, residuals characterization and sites to be completed before combining their results to form "candidate options" (alternatives including sites and technologies) for detailed engineering and environmental evaluation. Reports documenting the evaluations performed for technologies, transportation and residuals characterization were submitted to MEPA in February 1987. Certification of the reports by the Secretary of Environmental Affairs was received in April, 1987.

The site screening and candidate options identification reports previously mentioned were submitted in August, 1987. The reports were noticed in the Environmental Monitor on September 11, 1987. A public comment period was then provided

for by MEPA. On December 2, 1987, the Secretary of Environmental Affairs issued a certificate on the Special Procedure finding the reports to be adequate. The certificate (see Appendix B) enables the development of the Residuals Management Facilities Plan by the MWRA to proceed to the candidate options evaluation phase. The evaluation will consist of both engineering and environmental review of the final candidate options.

The MWRA has received a revised long-term residuals schedule from the United States District Court which targets the upcoming months for on- and off-site data collection program activities. The schedule also identifies milestones where technical analysis results are to be submitted for the RMFP candidate sites. This next phase of plan development by the MWRA is directed towards a December, 1988 deadline for identification of the prefered alternative and a final decision announcement by October of 1989.

2. REFINEMENTS OF THE CANDIDATE OPTIONS

2.1 Categorization of Sites

The MWRA has reviewed the multitude of comments generated by public and private participants in the site selection process. These comments lead the Authority to conclude that it is appropriate to further refine the site selection process before the critical next step, the detailed environmental and engineering evaluation of individual sites. There is now sufficient uncontroverted evidence in the record of this program to categorize the twelve sites nominated by the Authority's Board into two distinct groups. Such a categorization is appropriate in light of: (1) the information received through the MEPA comments; (2) the need to assure a timely, yet thorough review of those sites that have the most promising characteristics; and (3) a desire to direct staff, consultant, financial, and other resources away from sites that are less promising and towards sites that are more promising.

Accordingly, the Authority hereby proposes to categorize the twelve sites into the following two groups:

Group 1 - high priority sites that warrant further in-depth environmental analysis. These are sites that, at this point, are viewed as most likely candidates for residuals management facilities.

Group 2 - sites that are clearly less promising for residuals management facilities. It is recommended that further environmental and engineering reviews of these sites be discontinued at this time, not to be renewed unless or until it is demonstrated that sufficient other sites in Group 1 are found to be unsuitable. The Group 2 category is, in essence, to be considered a reserve list not warranting active evaluation at this time. As the detailed field investigations proceed over the upcoming months, additional data obtained may cause the Authority to categorize additional sites into Group 2.

Based on the staff's analysis, the following sites are recommended for inclusion in each group.

Group 1	Group 2
Malden/Revere (MAL-01)	Bedford (BED-09)
Wilmington (WIL-08/09)	Ashland (ASH-18/22)
Walpole-MCI (WLP-08)	Walpole-Bird (WLP-07)
Walpole-North (WLP-13/15)	
Stoughton (STO-06)	
Quincy/Braintree (QUI-07)	
Lynn (LYN-02)	
Spectacle Island (BOS-25)	
Deer Island (BOS-26)	

The following sections document the reasons for this proposed categorization. In general, the threshold variables for this stage of the analysis include the following:

Competing Public Use. The Authority is but one of many bodies politic in the Commonwealth--one with an important mission--but one which must recognize other, competing public uses for the sites under consideration. Where sites have been previously identified to have continuing, long-term public uses in conflict with the Authority's own proposed use, this factor has been influential in placing a site in Group 2.

Potential Conflicts with Other Major Environmental Protection or Environmental Rehabilitation Projects. The Authority remains committed to protection of the environment beyond the boundaries of its own programs. Where sites are proximate to ongoing or planned major environmental protection or rehabilitation projects, and the timing of MWRA activities may adversely impact or complicate the planned activity, this factor has been influential in placing a site in Group 2.

Transportation Access. Both the residuals landfill and processing sites require good transportation access. The landfill will receive 3 to 4 truckloads per day assuming no incineration, 6 to 8 truckloads per day assuming ash disposal, but must be able to receive up to 50 truckloads per day for up to a six-month period as an emergency back-up site. The need to import cover material at some of the sites could increase these transportation requirements by 30 to 40 percent. Processing sites could involve 40-90 truck trips per day. Thus, transportation access is a threshold criterion. Lack of such access, even given acceptable other characteristics, must be a significant consideration. For purposes of this analysis, lack of existing truck-suitable roadways and/or a high degree of difficulty in building new roadways is a key factor in placing a site in Group 2.

The Authority recognizes that other criteria should and will be applied over the coming months during the site selection process. However, we believe it appropriate to acknowledge, now, that the three above-mentioned criteria are important at this level of evaluation and can be applied based on current information. The failure of a site to meet any one of these three criteria must remove that site from the top priority Group 1 and warrant inclusion in Group 2.

A detailed description of each site and the rationale for its categorization follows.

Group 2 Sites

Bedford - The Bedford site has been downgraded to Group 2 for the following reasons. First, there is a competing public use of the property. Middlesex Community College has plans, and legislative authority and funding, to expand its campus to the location being considered by the MWRA for a landfill. Second, suitable truck access to the site would likely entail major transportation improvements that would have to be carried out by the State Department of Public Works (DPW). Based on

conversations with DPW, to cut an interchange into an existing limited access highway in Massachusetts, not designated as as part of the federal interstate system, requires 3-5 years minimum, under the most favorable scenario. The Authority intends to construct and begin using the long-term landfill as soon as possible so it may discontinue reliance on out-of-state landfills for the disposal of grit and screenings. A potential delay of 5 years or more before construction could begin while awaiting completion of an essential interchange is unacceptable.

Ashland - This site has been downgraded to Group 2 because the existence of the Nyanza superfund site adjacent to the property violates our criterion concerning potential conflicts with major environmental rehabilitation projects. Both DEQE and EPA offer technical reasons suggesting difficulty in the MWRA's ability to landfill near the cleanup site. While technically possible for both projects to coexist, the timing of activities will be in conflict. Creation of a situation that may jeopardize either the timing or the integrity of the Nyanza cleanup is not acceptable to the Authority.

Walpole (Bird) - This site has been downgraded to Group 2 because of the transportation difficulties that would have to be dealt with in accessing this site as a major sludge processing location. The Authority has under consideration a sufficient number of other sites as locations for these processing facilities, to which the traffic access is clearly superior. Unlike the other inland processing sites under consideration, the Walpole Bird site is not located immediately off major interstate highways. Access to the site is dependent upon use of residential streets with limited available capacity for trucks. The Authority intends to focus its resources in further evaluating those more promising sites.

Group 1 Sites

Many comments relating to transportation access problems, competing uses, and environmental concerns were also received on the Deer Island and Spectacle Island processing sites, the Quincy/Braintree and Lynn coastal transfer/processing sites, the Stoughton and Wilmington inland processing sites, and the Malden/Revere and Walpole (MCI and North) landfill sites. The comments brought forth information that will need careful evaluation in the upcoming in-depth environmental analysis. The information received from DEQE, EPA and other sources will continue to be evaluated along with new information being developed by the Authority as the engineering and environmental evaluation process continues. However, based on the staff's analysis, there is not sufficient information at this time to downgrade the status of any of these sites and all nine will be retained in the high priority Group 1.

Despite concerns about transportation problems in Quincy/Braintree, the Quincy Site has been retained in Group 1. There is an existing rail line that serves the site. MWRA has committed in a recent agreement with the City to pursue use of rail.

Although the Lynn site is located outside the MWRA's sewer service area, staff and consultants did not identify any other large coastal site which could be evaluated as an alternative to the Fore River Staging Area as a coastal transfer/processing site and so the Lynn site will be retained in Group 1.

2.2 Technology and Related Program Issues

The Authority's positions on technologies and related issues at this juncture in the residuals management planning process are noted in responses to MEPA comments that have been compiled in subsequent sections of this comment document. However, a few major points will be addressed here.

Public desire, technical feasibility, regulatory policy and the Authority's own preference all indicate that emphasis in residuals management should be given to beneficial reuse. Ocean disposal is clearly not an option that the MWRA should pursue. As pointed out in EPA's comment letter (November 20, 1987), federal regulations (40 CFR § 227) prohibit ocean disposal unless no alternative means of disposal are available. MWRA concurs with EPA that in this case, such alternative means are available. Major concerns exist about incineration, and the current lack of available data to thoroughly address those concerns lead to the conclusion that incineration should be given a lower priority status at this time, possibly having a role in future years for management of secondary sludge beginning in 1999 when much more will be known. Because of this possible future role, this technology will continue to be evaluated in the RMFP.

The following are high priority issues that will be emphasized in the Authority's residuals and water quality programs:

Beneficial Reuse. It is the MWRA's intention to develop and implement, to the greatest extent possible, programs involving beneficial reuse of sludge rather than processing and disposal through incineration and ash landfilling. Emphasis will be placed on composting and heat drying/pelletizing as major technologies for management of sludge beginning in 1995 and, possibly, before.

Marketing Plan. With multiple products (pelletized sludge, compost and, perhaps, compost mixes), the MWRA expects to enhance its ability to support a large-scale beneficial reuse program and will undertake initiatives to identify and cultivate local and regional markets for sludge-based products.

Since 1984, the Authority has been operating a pilot-scale composting facility on Deer Island. During 1987, a greenhouse study was conducted to begin the assessment of beneficial uses of the MWRA's composted sludge. Over the next several years, a series of demonstration projects will be undertaken to

illustrate the benefits of compost utilization in land reclamation, landscaping and horticultural applications. As authorized by its Board of Directors, the MWRA will also consider developing a larger scale interim composting facility so that compost can be produced in sufficient quantities for acceptance testing by parties interested in receiving compost in future years when permanent facilities go into operation. A compost placement strategy has been developed that identifies institutional outlets for compost that could be targeted in the early years of the compost program, while private markets are being developed.

Pretreatment. The Authority will continue to strengthen its pretreatment program through increased monitoring and enforcement in order to improve residuals quality. Other measures, such as increased corrosion control in the water distribution system, will be examined for their potential costs and benefits in improving wastewater quality.

Regulatory Controls. The MWRA recognizes the need for appropriate controls in sludge management programs to protect public health and the environment. However, the current DEQE regulations were developed principally for application of sludge to agricultural lands and clearly will be inhibitory to future compost distribution programs unless more appropriate controls are adopted. The Authority is currently examining this issue and will propose changes and/or additions to the current regulatory framework.

Multiple Sites. The Facilities Planning Citizen's Advisory Committee, MWRA Advisory Board, EPA, and other commenters expressed their belief that the use of multiple processing sites should be considered. The MWRA already has a large number of options for future residuals management under active consideration, but agrees to develop and evaluate an additional candidate option to illustrate the relative advantages and disadvantages of using multiple processing sites.

3. GENERAL PROGRAM RESPONSES

3.1 Program-wide Review Comments

A number of the review comments received pertain to issues that focus on the RMFP program in general. In addition, a set of the review comments that were submitted address issues that were observed to be a common concern among a number of the sites. The information prepared in response to these two types of program-wide oriented review comments is presented in this section of the report.

The information presented has been organized into the following categories that reflect the nature of the issues identified by the review comments:

- Policy Issues
- Technology Related Issues
- Site Screening Issues
- Environmental Issues

3.2 General MWRA RMFP Policy Issues

There should be equitable distribution of regional responsibility in siting residuals management facilities.

The residuals management project team is in the process of developing proposed evaluation criteria for the candidate options. These evaluation criteria will be used to assess a broad range of impacts in four categories: environmental; technical; institutional; and financial. One of the proposed institutional criteria is the regional distribution of responsibility. These criteria will go through extensive public review and comment through May 1988. The project team will be working closely with members of the Facilities Planning Citizens Advisory Committee (FPCAC), the Regional Task Forces, and the general public to develop a full set of criteria that reflect public concerns and effective means of using these criteria.

Regional responsibility should be broader than the MWRA service district, since Boston is the commercial, financial, and cultural hub of the Commonwealth.

The MWRA believes that every effort should be made to manage and dispose of residuals from the wastewater treatment plants within the MWRA sewer service district. If there proves to be no reasonable, feasible options within the service area, the scope of the study will be expanded to include other communities or options. In response to numerous public comments on this issue, the MWRA has issued a formal Request for Proposals (RFP). The RFP went to every community in the Commonwealth to solicit sites that might be feasible for residuals handling or disposal. The intention of this RFP is to determine if there are communities, within or outside the district, that are willing to host these activities in exchange for certain mitigation/compensation measures (water and/or sewer, financial incentives, etc.).

In addition, the residents of the Commonwealth outside of the MWRA service district will be bearing some financial burden for the project. As the federal water pollution control grant program is phased out over the next four years, the state grant program is proposing to pick up a larger share of the design and construction costs (currently 35%). The MWRA is making every effort to minimize the financial burden on its ratepayers by taking advantage of the state grant program.

There has been a lack of adequate public participation in the site selection process to date.

The MWRA has been meeting or surpassing all federal and state public participation requirements throughout the project. The community briefings that were held between September and November of 1987 were in addition to those required by regulations. The intention of the briefings was to create a vital exchange of information between the MWRA and the

public. The information that was gathered has been documented and incorporated into the Residuals Management Facilities Plan to date.

The Facilities Planning Citizens Advisory Committee (FPCAC) was established by MEPA to review and comment on the RMFP project. The CAC and its Residuals Subcommittee have met with the project team regularly since October 1986 and provided input into the site screening and technology evaluation process.

After the release of the Site Screening and Candidate Options Reports in August 1987, there was a sixty-seven day MEPA comment period. Approximately 2000 comments were received. This document is a response to the major issues raised during the comment period.

Now that specific sites have been proposed, the MWRA is moving forward to incorporate public review and comment through five regional task forces representing the community, elected officials, environmental concerns and business interests in the affected communities. The MWRA will continue to hold public meetings at milestones in the project to explain the status of the project and receive guidance from the general public about the issues of concern. The next set of public meetings is scheduled for late February to discuss the scope of the detailed enviornmental analysis and gather new data on the sites for the extensive field study.

There is competition for many of the sites with other public and private development plans.

The MWRA is fully aware of the development plans for the proposed sites. In the case of public development plans, the MWRA has worked closely with the appropriate state agencies to determine their needs and priorities. This is a major reason the Bedford site is being dropped from the list of candidate options. Expansion plans have been in place for Middlesex Community College for some time now and state monies have been

appropriated for this purpose. The MWRA is committed to assessing the needs and priorities of any other public development plans proposed for the selected sites.

In the event of a conflict with private development plans, the MWRA believes that even though the residuals project may take several years to plan, design, and implement, the public value of this project outweighs the value of any private development plans and should take priority. Any new development on potential sites runs the risk of having the land taken by eminent domain.

There has been insufficient coordination with other MWRA activities, particularly in Quincy and Winthrop.

The Residuals Management project team has been working closely with the staff from the other major programs (e.g. Secondary Treatment Facilities Planning and Water Transportation Study) to coordinate these major projects as much as possible. The Program Management Unit at the MWRA has recently been established to oversee the design and construction of these facilities and ensure that all of the projects are coordinated and community impacts are minimized.

The MWRA should commit to mitigation and minimization of impacts beyond what is required by regulation. There should be compensation for diminished value of neighboring properties.

The MWRA is firmly committed to working with communities to minimize and mitigate community impacts. The MWRA will work with each community on an individual site by site basis to address community concerns and mitigate impacts. However, the Authority is reluctant to commit to a district-wide policy on mitigation because, just as community needs vary, responses and mitigation measures, by necessity must vary.

Recently the MWRA agreed to sign a significant mitigation agreement with the City of Quincy to compensate the City for the impact MWRA activities will have on the community during the Interim Sludge Management period. The MWRA has also been in extensive negotiations with the town of Winthrop for agreeable mitigatory measures for the new primary and secondary treatment plants.

The MWRA should commit to improving the quality of the residuals to maximize beneficial reuse.

The MWRA has established two programs to improve the quality of the residuals. The first is a Public Education Unit to develop a complete public information program about household hazardous waste and their impact on the wastewater treatment system and residuals quality.

The second is the Industrial Pretreatment Program. There are three components to a successful industrial program: strict regulations; frequent inspections; and speedy enforcement. The MWRA has recently made significant improvements in each of these areas. On May 1, 1987 the MWRA implemented stringent new regulations for industrial discharges into the sewer system. Since the inception of the Authority, the Industrial Pretreatment Program has steadily increased its staff and plans to continue to do so for the coming fiscal years. Lastly, the new regulations also include procedures for the MWRA to impose daily fines for illegal discharge into the sewer system. These new provisions have already resulted in several, well-publicized enforcement actions which have illustrated to industries that illegal discharges in the future will no longer be tolerated. These improvements in the pretreatment program will continue. It is fully expected that the quality of the residuals will follow suit.

Should the sites be chosen before the technology is chosen?

When the RMFP study design was established, the Authority was directed by MEPA Special Procedure to look at four different issues on a parallel track and then bring them together. These four issues were sludge quality, technology, transportation, and sites. They were evaluated separately but concurrently and the results brought together for the candidates options (site and technology combinations). The technologies chosen were deemed to represent the best available technologies to date in terms of environmental and engineering characteristics. Sludge drying has been elevated to a full scale technology as a result of further investigation and public comment. The other technologies chosen were composting, combustion, and landfilling. These technologies have proven to be reliable based on their use throughout the world. The MWRA is open to alternatives and firmly committed to finding the best available solution for the district.

During the detailed analysis phase of the project, each site will be evaluated as part of a treatment process train or candidate option. Based on further analysis and public comment, sites and options have been recatagorized as less prefered alternatives that will not be studied further at this time. This site evaluation process will continue as additional technical and environmental data are collected during the field studies.

The tight court schedule and excess haste may result in potential public health risks and community impacts being overlooked to meet the schedule.

The MWRA is on an agressive schedule to stop the pollution of Boston Harbor and Massachusetts Bay. Decisions about how to control this pollution have been postponed for too long. However, the MWRA has proposed changes in the court schedule so

that potential health risks and community impacts can be fully evaluated and so that there is ample opportunity for the public to comment on the analysis and evaluation. Even with these proposed changes, the MWRA intends to meet the court ordered deadlines for ceasing the dumping of sludge in Boston Harbor. The Interim Sludge Management program is forging ahead with privatization contracts and public backup alternatives to achieve this goal. Recently, the City of Quincy and the MWRA announced an agreement on interim sludge handling that will help propel the Boston Harbor Cleanup program significantly ahead of schedule.

The MWRA will not compromise public health risks. The Authority has established a detailed field program and evaluation procedures that maintain the highest standards of accuracy and quality. Every step of the project planning is also being reviewed for technical quality and thoroughness by state and federal regulatory agencies. Each of the participating agencies is requiring the MWRA to address the public's concerns. In addition to this, the MWRA is committed to assess alternate beneficial reuse technologies for sludge during the interim period.

There are multiple sites within one community and this poses an unfair burden.

The site screening RMFP study component was a strict, technical, objective process designed to eliminate question of subjectivity as much as possible. Each community within the MWRA service area had at least one site within the initial 299 locations identified for evaluation. Sites were selected on their technical suitability relative to other locations in the site bank. The process was rigorously adhered to and resulted in three sites being initially selected in Walpole. As stated above, the question of regional distribution of responsibility will be assessed in the detailed evaluation and incorporated into the study.

Winthrop objects to the segmentation of the RMFP portion of the project and the inclusion of Deer Island as a potential sludge site. The additional twenty acres set aside for residuals should be available for possible needs arising from the construction and operaton of the primary and secondary treatment plants.

The MWRA acknowledges the unique situation presented by the potential use of Deer Island as a residuals processing site. The separation of the Secondary Treatment Facilities Plan from the Residuals Management Facilities Plan does not violate the intent of environmental review requirements by predetermining the location of the sludge management facilities. The Residuals Management Facilities Plan is subject to separate (state and federal) environmental reviews which will ensure that all potential impacts are considered and addressed. Each of these reviews has been conducted with strict adherence to federal and state environmental review requirements and will consider the regional distribution of responsibility and the cumulative impacts of other facilities as part of the detailed analysis.

Lynn is not a member of the MWRA sewer service district and therefore does not contribute to the Boston Harbor problem. Cooperation from Lynn is limited to worker transportation to Deer Island.

Given the commitments on barging materials from Deer Island and the extreme scarcity of coastal sites in the MWRA sewer service district, there is a compelling need for alternative coastal sites for residuals management. This compelling need has led to the inclusion of the Lynn site as one of two coastal sites under investigation.

Technical Residual Program Issues

The health effects from incineration of sludge are largely unknown and current regulatory requirements are inadequate. Therefore incineration should not be considered for MWRA residuals management.

MWRA shares the public's concern about the availability of information regarding emissions from sludge incineration. MWRA and its consultants have initiated efforts to compile a data base on atmospheric emissions from sewage sludge incineration. New test data is being gathered at a more rapid rate than in the past since EPA has recently requested extensive testing for any new incinerator. EPA is also funding more testing studies as part of the developing regulatory programs for sludge management. New test data will be gathered and analyzed as it becomes available throughout the RMFP process.

It is the MWRA's intention to develop and implement, to the greatest extent possible, programs involving beneficial reuse of sludge rather than processing and disposal through incineration and ash landfilling. Nevertheless, the MWRA is obligated to review all currently feasible technologies and to identify appropriate sites for these technologies. To the extent that incineration may be necessary, the MWRA is committed to employing the best available facility design, operating and emissions control practices.

The MWRA should study ways that the sludge handling, processing, and marketing aspects of its interim privatization program (1991-1995) could be continued as part of the long-term residuals management program.

Heat drying and pelletizing of sludge for land application, as proposed for use in the MWRA's interim

privatization program, will be carried forward for further evaluation along with the technologies of composting and incineration.

Projections of the quantities of residuals to be landfilled and the associated transportation and land area requirements are unclear.

The MWRA is continuing to evaluate the extent to which it can rely on programs involving beneficial reuse; however, the Authority is obligated to locate one or more landfill sites to dispose of those residuals for which there are currently no practical and reliable means of beneficial reuse. These residuals are grit, screenings and, to the extent it is practiced, ash from the incineration process. In addition, the DEQE requires that such a landfill must also provide sufficient capacity for the disposal of six months production of sludge in case of emergencies at the MWRA's principal sludge processing facilities.

Current projections of the daily average production of minor residuals are listed below.

	Wet Weight (tons)	Volume (cubic yards)
Grit	59	55
Screenings	31	38
Ash (wetted 20 percent moisture)	50	89

Early planning is focusing on the use, to the extent possible, of tractor trailers for the transport of these materials that would have payload capacities of approximately 30 cubic yards and 20 tons per trailer. The trailers hauling grit and screenings would be of drip-proof design, and all trailers would have covers appropriate for the material being transported. The present projection of daily truckloads for grit, screening, and ash is 6.

During emergencies, dewatered sludge may have to be transported to the landfill for disposal. The current projection of the daily average production of dewatered digested sludge is listed below.

	Wet Weight (tons)	Volume (cubic yards)
Dewatered Digested Sludge		
1995-2000	390	480
2000-2020	1,000	1,183

Emergency transport of sludge may involve up to 50 truckloads per day.

The land area requirements for landfilling vary substantially from site to site due to differences in site shape, topography, groundwater and bedrock conditions, and surrounding terrain and land use. These factors determine the amount of land at a site that can be made available for landfilling and the depth of fill that could reasonably be accommodated. The MWRA established a goal of 100 net useable acres for its screening of potential landfill sites, but found few suitable sites that met this size criterion. Three of the five sites initially selected (MCI Cedar Junction, Bedford, and Malden/Revere) did not fully satisfy this area goal but were judged to be among the top candidates for a landfill after examining all sites in the site bank of 40 or more acres. The adequacy of any one of these sites to satisfy the MWRA's landfill capacity needs will have to be evaluated based on site specific information to be collected over the next four to six months. During that same period, means of reducing the volume of materials to be landfilled will be explored.

Some previous tests have indicated that scum may be a hazardous waste and, therefore, is not suitable for landfilling.

Although scum is one of the "minor" residuals that are separated from the wastewater during treatment, the MWRA does

not plan to landfill this material along with the grit and screenings. Scum will be processed along with sludge.

The MWRA should consider siting smaller residuals management facilities on multiple sites as a way of reducing the burden on host communities.

The candidate options were developed to examine the relative advantages and disadvantages of locating either composting, incineration/heat drying, or both types of facilities at several different island, coastal, and inland locations. The upcoming evaluation of the candidate options will show the effects of using two processing sites instead of a single site. The Facilities Planning Citizen's Advisory Committee, MWRA Advisory Board, EPA, and other commenters expressed their belief that the use of more than two processing sites should be considered. The MWRA already has a large number of options for future residuals management under active consideration, but agrees to develop and evaluate an additional candidate option to illustrate the relative advantages and disadvantages of using more than two processing sites.

Pipeline should be the preferred option for transporting sludge from Deer Island to the sites where processing will occur.

The use of pipelines is being evaluated by the RMFP project team along with other transportation options such as barge, rail, and truck. The upcoming candidate options evaluation will be used to determine which transportation method or combination of methods best fits the MWRA's needs. Community impacts will be one of many factors that will be considered in this determination.

Why can't the sludge be treated electronically and dumped in the ocean?

The MWRA has concluded that ocean disposal is not a practical method for sludge management because of current

regulatory constraints. (See Draft Report on Assessment of Technologies, February 1987, pp. 4-55 through 4-64). This conclusion was supported by the EPA in its letter to MEPA of November 20, 1987, in which EPA commented on the Authority's site screening and candidate option identification process. Electron irradiation treatment would be one of disinfecting sludge, but it would do little to reduce the other adverse impacts to the marine environment from heavy metals and other constituents present in the sludge.

Sludge incineration should not be planned for any location at this time due to the potential for dangerous atmospheric emissions.

MWRA and its consultants have begun compiling an extensive data base on atmospheric emissions from sewage sludge incineration. New test data is being generated at a more rapid rate than in the past since EPA has recently requested extensive testing for any new incinerator. EPA is also funding more testing as part of developing regulatory programs for sludge management. All new test data and available public health impact data will be gathered and analyzed as it becomes available throughout the RMFP process.

The incineration of sludge will be evaluated against the air quality standards and guidelines established by the DEQE. Operation of all types of incinerators require compliance with DEQE regulations.

Further examination should be undertaken of the operational procedures of the combustion, composting, or landfill facilities and impacts on the community relative to dust control, surface drainage, leachate control, hours of operation, site security, noise and other environmental factors.

The classification of the MWRA RMFP project as "Major and Complicated" and issuance of a "Special Procedure" by the

Secretary of Environmental Affairs included a program directive that an environmental review be conducted of the candidate options developed for the RMFP program. The upcoming analyses will focus on detailed engineering analysis and environmental review of site-technology specific combinations. Included in the upcoming analysis will be comprehensive evaluations of the impacts of each option on the community including the factors mentioned in the review comments.

General Siting and Environmental Issues

A number of the review comments were directed towards the numerical scores assigned to sites.

Many of the towns used information contained in the Site Screening Analysis Methodology document as a "user's guide" and have submitted proposed revisions to some or all of the scoring for their respective sites. Most of the proposed changes were derived through the use of alternative data sources or through different interpretation and application of the criteria.

The screening that resulted in the selection of sites that formed candidate options was conducted through consistent application of the criteria to a set of data common to all sites. The scoring assigned to the sites was reviewed by the consultant team and determined to be reflective of the prevailing environmental conditions. As reinforced by MEPA and agency review, the site screening has fulfilled its purpose of providing an objective means to differentiate sites. The Candidate Options Report explains that scoring, although important, was but one of a total of seven criteria used to select sites. Criteria which were the basis for formulating candidate options included:

- ranking;
- site use flexibility;

- development status;
- system compatibility;
- site transportation access;
- permitting feasibility; and
- variety of site types.

The additional information submitted by the towns in their review of a sites suitability and that which is currently being gathered through a series a community contacts will be considered in the evaluation of candidate options which will include a comprehensive environmental assessment of each candidate option.

Concern about the transportation of hazardous waste material and the proximity of sensitive receptors to the sites.

The Report on Characterization of Residuals concludes that based upon the results of EP toxicity tests, neither the sludge nor sludge-based product produced at the MWRA's wastewater treatment facilities are classified as hazardous. Sludge characteristics projected for the timeframe when the new wastewater treatment facilities goes on-line are not anticipated to be classified hazardous.

The transportation of residuals will utilize vehicles that provide for containment of particulate emissions and liquids.

Much of the land surrounding several of the sites is very hilly and contains ledge.

As reported in Volume I of the Site Screening Methodology, U.S.G.S. Topographical Quandrangles were used to evaluate the dominant topography of each site and the surrounding area. To ensure the accuracy of the site data, reconnaissance-level field verification surveys were undertaken. Site features such as slope and depth to bedrock will be re-addressed in the

upcoming site review. Field surveys and on-site drilling will be used to augment existing data to better provide an understanding of construction constraints from terrain and bedrock conditions.

Increase in noise pollution and impacts on community.

The next level of candidate options analysis will include a comprehensive noise monitoring program at potentially sensitive land use locations surrounding each site and detailed evaluation of potential noise impacts using modeling techniques.

There was no accounting for differences in continuous vs. intermittent sound and variations in day-to-day levels. Noise should be evaluated as a cumulative function. Why are theaters "very sensitive" and residences "sensitive"?

The assignment of categories of land uses to sensitivity categories was abstracted from "Noise Impact Analysis" by Vincent E. Mestre and David C. Wooten. In the site screening phase of the residuals program development no differentiation was made between "very sensitive" and "sensitive" locations; both were treated as "very sensitive".

In the upcoming environmental assessments, noise measurements will be taken during daytime and nighttime conditions at several locations along each site boundary and at sensitive receptor locations surrounding each site. The impact assessment will take into account continuous vs. intermittent noise and will evaluate not only the changes in noise levels expected, but the cumulative noise impacts as well.

The Screening Analysis used inaccurate data and failed to use current data sources.

The nature and extent of the screening phase analysis as well as the specific data sources and sets of criteria that would be used were thoroughly discussed among MWRA, DEQE and

EPA prior to program implementation. The most comprehensive and consistently published information that was available across the entire geographic study area was used. Maintaining consistent data sources insured that each site was evaluated using comparable information.

The site screening analysis has fulfilled the objective of narrowing down the ~ 300 sites under consideration to a manageable set that can now be evaluated in greater depth. The evaluation to be performed will include collection of on-site and off-site environmental data by the consultant team. The focus of the next level of data collection will also be consistent for each of the candidate sites.

Decreasing property values and impacts on existing and potential economic activity in the vicinity of the site could occur.

Economic impact and cost considerations will be included in the next phase of work. Included in the review will be the possibility for impacting property values and tax revenues.

Air emissions of gases or small particles could create additional health hazards and air quality degradation.

As presented in Volume I-Site Screening Analysis, the air quality review included evaluation of the dispersion characteristics of a site in terms of surrounding terrain, wind exposure, and ventilation characteristics; the existing air quality, in terms of attainment status; and the presence of nearby major emission sources whose emission plumes could potentially interact with emissions related to a residuals facility.

The environmental analyses underway will include detailed emission characterization and air quality modeling analyses. State of the art technological controls will be identified to ensure compliance with all applicable regulations and protection of public health.

Any odors created by the processing of the material could negatively impact the residential population.

Detailed characterizations and mapping of surrounding land uses will be undertaken during the next phase of site evaluation. The analysis will include evaluating potential odor impacts associated with combustion, composting or landfill activity. This evaluation will include detailed dispersion modeling of odor causing compounds.

Groundwater, aquifier recharge areas, wetlands, streams and ponds face the threat of contamination from residual facilities.

During the Site Screening Phase, evaluation criteria concerning ground and surface water resources as well as wetlands were applied to all sites. For surface water, proximity and quality of on-site and off-site resources were considered along with boundaries of the 100 year flood zone and wetland communities. Location and potential yield of ground-water aquifers were considered along with proximity of drinking water wells.

The candidate options phase includes a detailed field program description of encompassing site features; wetlands mapping; characterization of surface water quality, quantity, and site drainage patterns; and classification of groundwater elevation and quality, aquifer recharge characteristics and nearby water wells

Each RMFP technology will be assessed for its impacts to hydrology and the MWRA will comply with all federal and state regulations pertaining to wetlands, waterways and water quality. For ground water, issues to be analyzed include impacts to aquifer recharge patterns, potential containment, migration and facility discharges to groundwater. Surface water and wetlands issues include facility stormwater runoff quality and patterns and potential impacts to streams and wetlands.

Increased traffic will cause significant transportation and safety impacts.

In the analysis of environmental impacts of each candidate option, traffic impacts will be evaluated using roadway capacity and safety criteria.

In the Tier 2 Screening, the MWRA has substituted its own judgements concerning site rankings for those judgements derived at least partially through a public process. In the Candidate Options report there is an absence of any explanation of substantiated reasoning for the rejection of sites.

The Tier-2 suitability scores utilized weighting factors derived from input from both the public (via an atitudinal survey) and the technical team (via technology-specific coefficients). The overall technology-specific suitability score was the product of 1) the raw suitability score, 2) the atitudinal survey-based weighting factors, and 3) the technology-specific coefficients. This approach and the technology-specific coefficients used were reviewed with DEQE and EPA as part of the on-going interagency coordination process.

The sites recommended for further evaluation as locations for one or more components of the residuals management program within the context of candidate options were selected based on the application of the following criteria to the technology-specific lists:

- Ranking: the applicable technology-specific numerical ranking from the Tier 2 site screening analysis.
- Site Use Flexibility: including site size and the apparent adaptability that the site provides for current program uses and potential changes in future program needs.

- Development status: the current and likely near-term availability of the site in terms of known competing plans for site use.
- System Compatibility: with respect to geographic locations of other sites within each system alternative.
- Site Transportation Access: the ease or difficulty with which the transportation needs of the system alternatives could be met.
- Permitting Feasibility: the presence of any major or insurmountable permitting obstacles(s) based on the intended site use.
- Variety of Site Types: to provide decision-makers with a range of geographic options for future residuals management.

A more detailed description of each of the site selection criteria can be found in Chapter 2 of the Candidate Options Report.

The selection of weights to be applied to site suitability scaling factors should be revised based on newly reviewed criteria and a public process of incorporating technology related factors into a single set of weights.

The technology-specific site ordering process utilized weighting factors that were derived from input from both the public (tier 1 general weighting factors) and the technical team (tier 2 technology co-efficients). Both factors were applied to the raw site suitability scores to derive a technology-specific suitability score.

A simplistic ranking technique graded the sites in ten broad areas, and weighted and added the scores. Minimum acceptability criteria should have been used.

To ensure the broadest consideration of sites, "minimum acceptability" criteria were limited to (1) geographic locations (generally within the MWRA service area, with the exception of coastal sites); (2) size (5 acres coastal, 8 acres inland); and (3) development status (sites with building development in active use were not considered).

The screening/process does not allow distinction between closely similar sites.

The site screening ranking was one of seven factors used in identifying sites carried forward for potential inclusion in the candidate options. The purpose of the screening phase was to identify the top group of sites exhibiting characteristics than warranted further consideration in the residual plan development. The addition of the additional six factors previously described in this document eliminated any significance of differing scores between closely similar sites.

The documents state that "Particular attention was placed on MEPA requirements regarding the description of the environment in the area likely to be affected by the proposed Project"...did this include inhabitants?

The criteria utilized in the site screening focus on protection of inhabitants, either directly or indirectly through preservation of environmental quality. Criteria focusing directly on inhabitants include: location of sensitive receptors, current site use, neighboring land use, community development objectives, and proximity to drinking water wells. The primary objective of the environmental

component of the RMFP program is to insure that the health and safety of the affected public is protected through compliance with DEQE standards and guidelines.

3.4 Agency Comments

Massachusetts Department of Environmental Quality Engineering (DEQE) Comments

The Massachusetts Department of Environmental Quality Engineering issued comments and provided additional information regarding public water supplies and hazardous waste sites within the general area of the 12 preliminary sites. The Division requested that MWRA's consultants utilize the information during the subsequent evaluation efforts to allow for a full assessment of the potential impacts from the construction and operation of a particular technology/site combination.

Since receipt of DEQE's comments, MWRA and their consultants have held meetings with the DEQE and EPA regarding water supply and hazardous waste site issues brought out in the initial screening and any additional information collected in the continuing site evaluation efforts. There is not sufficient basis at this time to rule out any site on water supply issues. As part of the ongoing inter-agency coordination effort, information sources, field data collection programs and analysis methodologies are being formulated. The Authority will continue to work closely with these agencies to ensure adequate data development and analysis.

U.S. Environmental Protection Agency (EPA) Comments

EPA raised several issues regarding the detailed aspects of the technologies that have been carried forward to formulate Candidate Options.

Specific examples of technology related issues raised include:

- control of combustion of scum;
- polymer conditioning of sludge to be de-watered on recessed filter presses;
- the extent to which pipeline and/or rail transport will be carried out for detailed evaluation;
- timing for implementation of composting vs. combustion;
- and the potential use of sludge drying as a processing option.

Several of EPA's comments on technologies parallel those received from other sources and are addressed in other sections of this report. MWRA has met with EPA on these issues as part of the ongoing inter-agency coordination process. A series of Technical Memoranda are being prepared to address each issue individually. Issues regarding the detailed aspects of the Residuals Management Facilities Plan will continue to be discussed and reviewed as an ongoing part of the inter-agency coordination process.

EPA evaluated the reasonableness of the sites chosen by MWRA from the perspective of identification of a sufficient group of sites without apparent preemptive or unmitigable constraints in the following categories:

- existing on-site or near site contamination;
- preemptive or incompatible land use;
- transportation access;
- potential conflicts with drinking water supplies;
- physical land use features relating to air quality;
- potential conflicts with wetlands or endangered species.

EPA concluded that while enough of the important features were considered by MWRA to support the screening to date,

certain additional investigations should be conducted before the final set of candidate options for further evaluation are selected.

Based in part upon EPA's comments, MWRA over the past few months has gathered additional secondary data through a series of contacts with DEQE, EPA and agencies and departments within each of the communities preliminarily selected for hosting a residuals management facility. An additional screening phase has been undertaken to further refine the list of candidate options to be evaluated in the upcoming analyses. Details concerning this evaluation and its results are discussed in Section 2 of this report.

EPA raised several concerns regarding the potential conflict with ongoing and planned remediation actions and investigations at the Nyanza Superfund site.

Since receiving comments regarding the Nyanza Superfund site, MWRA and their consultants have held meetings with EPA and DEQE to discuss in detail the issues surrounding potential conflicts that may be brought about by MWRA's use of the Ashland site as a landfill. Information concerning existing conditions at the Nyanza site and details of the proposed staged remediation efforts were provided to MWRA. Concerns raised regarding potential groundwater and surface water impacts resulting from upgradient changes in conditions have been carefully reviewed as part of the intermediate screening step and are discussed in Section 2 of this report.

4. SITE-SPECIFIC REVIEW COMMENTS

This section of the document provides information in response to site-specific review comments received by MEPA. The information is presented for each of the 12 sites that are included in the candidate options under consideration.

SITE SPECIFIC:
ASHLAND

The Ashland Landfill Advisory Committee submitted 33 questions to the MWRA in regard to the RMFP site screening analysis. These questions topically cover the comments and questions submitted by other organizations, officials and citizens from the Town of Ashland. The following section responds to this set of questions.

What are the exact boundaries of the proposed site?

The Ashland site at this point in the study process includes part or all of the land parcels owned by the following:

- Charlotte Cookingham
- M.C.L. Development Corp.
- Robert Gayner
- K and B Homes Inc.
- James R. Hickey
- Anthony Liberatori, et al
- John and Margo Ellsworth
- Albert Greene
- Charlene Conserva
- Warren M. Walkup Family Trust

As stated in the site screening reports, the precise definition of site boundaries is dependent upon the following considerations:

- research on site ownership;
- refinement of residual program facility land area needs; and
- analysis of environmental characteristics of the parcels comprising the site.

The MWRA is continuing its research into the ownership status of parcels comprising each of the sites under consideration.

Is an EIS necessary and, if so, when would it be available?

As discussed in Section 1.1 of this document, several reports have already been completed, pursuant to the Special Procedure established by the Massachusetts Executive Office of Environmental Affairs for the MWRA's Residuals Management Facilities Plan (RMFP). A series of reports that will comprise an Environmental Impact Report (EIR) are to be prepared documenting the engineering and environmental evaluations performed for the candidate options. The information developed in the EIR will be submitted to the U.S. Environmental Protection Agency for use in their Environmental Impact Statement (EIS) review of the candidate options. EPA is required to prepare the EIS under the National Environmental Policy Act (NEPA) regulations. The Draft EIR reports should be available by September 1988.

What will be the impact on the Nyanza site?

Any potential use of the Ashland site for residual program landfill needs will be designed as a separate and distinct activity. As noted in Section 2 of this report, the potential relationship of the landfill use of the Ashland site to the Nyanza site cleanup is a major consideration.

More specifically, what were the criteria for choosing the sites?

The initial site screening analysis was performed using environmental criteria identified in the Massachusetts Environmental Policy Act (MEPA) regulations. These criteria consisted of the following: (1) engineering considerations (i.e., soils, depth to bedrock, on-site contamination, topography), (2) noise, (3) land use, (4) cultural resources, (5) transportation, (6) surface water, (7) groundwater, (8) wetlands, (9) ecology, and (10) air quality. The sites

recommended for further evaluation as locations for one or more components of the residuals management program were selected based on application of the following criteria:

- site screening analysis ranking
- site use flexibility
- development status
- system compatibility
- site transportation access
- permitting feasibility
- variety of site types (i.e., geographic variation).

What were the weights and selection ratio?

The methodology used to perform the site screening analysis is described in the following documents, copies of which have been provided to the Town of Ashland and submitted to the Massachusetts Executive Office of Environmental Affairs.

- Residuals Management Facilities Plan, Draft Report on Site Screening Analysis, Volume I - Site Screening Methodology, August 1987
- Residuals Management Facilities Plan, Draft Report on Site Screening Analysis, Volume II - Site Screening Results, August 1987.
- Residuals Management Facilities Plan, Draft Report on Candidate Options Identification, August 1987.

The weights used for each criteria are detailed in Volume I of the Site Screening Analysis. The values calculated for the Ashland site are presented in Volume II.

What were the other 300 sites?

The 299 sites considered in the screening analysis are listed in Table 2-1, Chapter 2 of Volume II of the Site Screening Analysis reports.

How important is the availability of rail service?

Since the quantity of grit, screenings, and ash from MWRA treatment facilities, is relatively small compared to the amount of sludge generated, (6 truckloads per day total for grit, screenings, and ash), current planning is focusing on transport of these materials by truck rather than rail. As part of the Site Screening Analysis, Site Rail Access was a sub-criterion of the major criteria, Transportation, and was worth a maximum of two points (See Appendix A of Volume II of the Site Screening Analysis reports). Therefore, although not a major factor, rail service availability was considered in the selection of sites to be evaluated as potential landfill sites for the disposal of minor residuals. DEQE regulations require that the landfill be designed with sufficient capacity to dispose of dewatered sludge in emergencies. This would be a larger quantity of material (50 truckloads per day), but would occur on an infrequent basis. To date, a cost comparison has not yet been developed for trucking or rail transportation; however, it is our preliminary judgement that the use of rail service facilities for transporting dewatered sludge to this site would not be justified.

What is in the sludge (specifics)?

Sludge is the material that is removed from wastewater during primary and secondary treatment. It is comprised principally of organic matter but, like the wastewater from which it originates, the sludge also contains smaller amounts of a variety of constituents that are found in household and industrial wastes. A lengthy discussion on the composition of sludge and minor residuals can be found in the Draft Report on Characterization of Residuals, (February, 1987), which was one of the first reports prepared as part of the RMFP planning

process. This report is currently being updated to reflect data from more recent sampling of influent to the Deer and Nut Island Treatment Plants.

What role do other environmental problems play in selection (re. Nyanza, Cadilac Paint)?

The evaluation to be performed of the candidate options leading to preparation of the EIR is based on analysis of the residuals program activities' potential impact on cumulative environmental conditions of the site proper and surrounding areas. The cumulative impact analysis includes consideration of other areawide activity which could affect environmental conditions such as Nyanza, Cadilac Paint, and other known land use development proposals.

Does MWRA have power of eminent domain?

In order for the MWRA to exercise the power of eminent domain, it would have to be granted by the State Legislature on a site specific basis. This is the only way the MWRA has access to this power.

What is MWRA's power over zoning?

The MWRA is not subject to the provisions of municipal zoning ordinances.

What are the specifics on surrounding housing? What is the number of houses affected at each landfill site?

The site screening analysis was based on a general description of land use development surrounding each of the locations. The general land use development patterns surrounding the Ashland site are contained in the Data Capture Forms for the Ashland Site located in Appendix A of Volume II

of the Site Screening Analysis reports. The EIR analysis will entail a detailed inventory and mapping of residential development surrounding each of the potential site locations.

How long would this site serve MWRA's needs and how would it be closed?

The goal of the current RMFP planning process is to locate sufficient landfill capacity to serve the MWRA's needs for minor residuals and ash disposal during the period 1995-2020. The landfill capacity that could be provided at each of the candidate landfill sites varies depending on the size and other characteristics of each site, and will have to be determined from more detailed information to be collected during the next phase of the planning process. Factors that will have a bearing on this determination include site size and topography, depth to groundwater and bedrock, location of easements or other encumbrances, and setbacks needed to adequately buffer surrounding landowners from planned activities at the landfill. Closure of the landfill at the end of its useful life is strictly controlled by the DEQE. Current regulations would require the landfill to be capped or otherwise sealed to minimize the infiltration of water into the fill and to be revegetated with grass or other plants that don't have deep root systems.

What would the impact be on the water table?

Use of the Ashland location for a residuals program landfill will require a site utilization plan and engineering design that will not affect the groundwater regime of the area. A minimum five (5) foot separation is required between the bottom liner of the landfill and the high groundwater table elevation.

How will the landfill be designed?

DEQE regulations governing this type of landfill were revised in January 1987 to require double liners and leachate collection systems, thereby making the regulations very similar to those governing hazardous waste disposal facilities. The minor residuals landfill would be developed in sections, with one section being closed (capped and revegetated) as the landfill operation is extended to the next. This mode of operation is important since, in modern day landfills, precipitation that falls in the "open" area of the landfill collects on top of the uppermost layer of the double liner system and must be removed and appropriately treated. Thus, in addition to preventing contamination of the underlying groundwater, the liner and leachate collection systems serve to keep the "working area" of the landfill to a minimum.

Will the landfill be lined and how will it be capped during use?

Lining requirements were discussed in the answer to the landfill design question. Current regulations require wastes deposited in a landfill to be covered after each day's operation with 6 inches of compacted soil or other appropriate cover material.

What is the projected tonnage (Dry? Wet?)

The projected average daily (7 days/week) quantities of minor residuals to be collected from the MWRA Treatment Facilities are listed below:

	Wet Weight (tons)	Volume (cubic yards)
Grit	59	55
Screenings	31	38
Ash (wetted 20 percent moisture)	59	83

What will happen if, in an emergency, the site is used for wet sludge?

The landfill operation for emergency disposal of wet sludge will be very similar to that for routine minor residuals disposal, except that the quantity of sludge is much greater than that of the minor residuals. During such emergencies, digested sludge would be trucked to the landfill after it had been dewatered to the consistency of a "stiff mud". As with other landfilled materials, a 6-inch layer of soil would be applied to cover the deposited sludge after each day's operation. The projected average daily (7 days/week) quantities of sludge are:

	Wet Weight (tons)	Volume (cubic yards)
Dewatered Digested Sludge		
1995-2000	390	480
2000-2020	1,000	1,645

How will the site be monitored (personnel, equipment, etc.)?

A specific monitoring program for the landfill will be developed as part of the RMFP planning process. At a minimum, and in accordance with DEQE regulations, groundwater monitoring

wells will be installed around the perimeter of the landfill and samples will be taken and analyzed on a routine basis to guard against contamination from the landfill operation. The leachate collection system will be monitored for the presence of leachate. Any leachate collected would be treated and disposed of in an appropriate manner.

Guarantees on future use?

The use of a specific site location for residual program facility will require DEQE approvals and operating permits. In addition, the sites will be evaluated for specific program uses under both the MEPA and NEPA regulatory review of the residuals management facility plan candidate options. A site will be available for use for the facility operations evaluated under the environmental impact statement and permitting process.

What is the long-term future of the site?

The landfill site alternatives will have a defined lifespan for program use based on the disposal capacity available. Once the landfill capacity has been depleted and a closure plan implemented that meets DEQE regulatory requirements, the MWRA Board, with community input will decide how the property will be disposed of in the longer term. Although the enclosed landfill will not support building development activities, some examples for its future use could include open space parklands, ball fields, or other greenspace recreational uses such as a golf course.

What is the percentage of sewerage that Ashland contributes to the MWRA system?

The community of Ashland contributes approximately 0.5 percent of the wasteload to the MWRA's treatment facilities. This wasteload consists of wastewater from those portions of the Town that are directly sewered as well as septage from the cleanout of individual septic systems.

The material to be landfilled is approximately 16 percent of the total residuals production from the MWRA's treatment facilities during the 1995 - 2020 planning period. The balance of the residuals will either be destroyed through incineration or beneficially recycled as compost or other sludge products. The percentages of the residuals to be landfilled are:

Grit and screenings	7.3%
Ash	7.1%
Dewatered sludge during emergencies	2.0%
	16.4%

What will be the buffer around the site?

The landfill sites have been chosen to provide a significant buffer between the residual facility activity and adjacent land uses. The specific dimensions of the buffer will depend upon the engineering design needs of the facility and the need to mitigate potential noise and visual impacts. The potential dimensions of the buffer areas will be one of the early products of the engineering and environmental studies of the candidate options.

Why not take ash further west/out of state?

The MWRA Board had directed that the long-term solution for residuals disposal be accommodated within the 43 communities comprising the sewer service area. Out of state solutions are not viewed by DEQE or EPA as acceptable long-term solutions due to the potential for environmental regulations pertaining to sludge and/or ash disposal changing within other states.

What are the traffic projections (Where? What kind? How many trucks?)

A specific transportation plan will be developed for each site as part of the RMFP process once more information is known about site access roads, roadway limitations, and availability of cover material on-site. Early planning is focusing on the use, to the extent possible, of tractor trailers that would have payload capacities of approximately 30 cubic yards and 20 tons per trailer. The trailers hauling grit and screenings would be of drip-proof design, and all trailers would have covers appropriate for the material being transported. The present projection of daily truckloads for grit, screenings, and ash is 6, while the projection for emergency transport of dewatered sludge is 50 truckloads per day.

A specific access plan for the Ashland site will have to be developed as part of the detailed site evaluation process. A new access road from Route 135 on the south will be among the access options studied

What kind of odor will the site produce (intensity, range, experience)?

The potential for off-site odor generated by the landfill operation will be controlled through the following procedures:

- processing of the sludge and other residuals prior to transport
- use of covered trucks to transport the residuals
- daily cover of material that has been landfilled.

What will the impact be on the Sudbury River?

A landfill operation at any of the locations under consideration for the residuals management facilities plan will be designed to protect the quality of both groundwater systems

and surface water bodies. Use of the Ashland site would have to clearly show that no impact on the Sudbury River and any other surface water bodies will result from the landfill operation.

Does Nyanza endanger the MWRA and vise versa?

As stated previously, the landfill would be a self-contained operation. This means that all leachate and drainage runoff from the landfill would be collected and not allowed to escape outside the confines of the operation. Thus spillage and leakage of these waste liquids to the surrounding area would not occur. The relationship and coexistence of the Nyanza site and the proposed MWRA landfill is an important consideration, as discussed in Section 2 of this report.

Is fly ash a problem?

Although detailed planning is in a very early stage, it is anticipated that a "dry" handling system will be used for ash handling at the combustion facility. To prevent "dusting" and improve handleability, water will be mixed with the ash prior to loading into transport vehicles to bring its moisture content up to approximately 20 percent. Current regulations would require that the ash, like other wastes being landfilled, be covered with soil or another appropriate cover material after each day's operation.

Why can't the sludge be treated electronically and dumped in the ocean?

The MWRA has concluded the ocean disposal is not a practical method for sludge management because of current regulatory constraints. (See Draft Report on Assessment of Technologies, February 1987, pp. 4-55 through 4-64). This

conclusion was supported by the EPA in its letter to MEPA of November 20, 1987, in which EPA commented on the Authority's site screening candidate option identification process. Electron irridation treatment would be one way of disinfecting sludge, but it would do little to reduce the other adverse impacts to the marine environment from heavy metals and other constituents present in the sludge.

Has MWRA fully explored extraction of heavy metals from ash or mixing the ash with other materials for a new use?

The MWRA is aware that beneficial reuse of ash such as incorporation into asphalt, light aggregate, wallboard, and other materials of construction is receiving increased attention in research and experimentation being conducted in this country and abroad. Operating facilities are relatively few in number at this time. The Authority is interested in and will continue to monitor developments in this field; however, current planning emphasis is on locating a landfill for disposal of this material in case reuse opportunities do not materialize or are found impractical.

How will the MWRA enforce precluding heavy metal concentrations from contributors to the system?

The MWRA is committed to reducing the amounts of heavy metals and other toxic materials that are discharged to the collection systems of its member communities. A stringent set of industrial pretreatment standards and discharge limits has recently been adopted, and the Authority plans to increase its enforcement staff to more thoroughly monitor compliance with these regulations. The Authority will also be looking for other ways of reducing the quantity of these materials that enter the collection system, whether they be of industrial origin or from other sources such as household wastes.

There is an Indian Burial Ground in the adjacent area, what effect would this have on the MWRA interest?

The landfill site utilization plan for the Ashland site would have to comply with the requirements specified by the Massachusetts State Historical Commission. These general procedural requirements include:

- Survey of site by registered archeologist
- Mapping of any cultural resources found on-site
- A discussion with the State Historical Commission on what should be inventoried and accommodated with respect to site development
- Implementation of the plan development with the State Historical Commission

The environmental review of each of the sites will incorporate an extensive evaluation of cultural resource considerations.

SITE SPECIFIC:
BEDFORD

Town wetland maps indicate a higher percentage of wetlands than the reports indicate. How was the information of no rare species of flora or fauna verified if no survey of the site was done? Specific soil characteristics, ground water elevations and direction of flow, presence of wetlands and acquifer information that is accurate and current was available and not used for the site selection process.

U.S. Fish and Wildlife Service National Wetlands Inventory Maps and the Massachusetts Natural Heritage program data bank and maps were the main sources contributing to the wetlands and ecological rare species evaluation, respectively. The reasons for using data sources common to all sites, rather than town maps during the screening phase is discussed in Section 3 of this report. The next level of site review will consider all possible sources of information concerning the sites. Extensive site-specific field programs will be conducted to evaluate site conditions.

Limited water supply would be threatened by residuals program landfilling. Private drinking wells are located as near as 100 meters. Bedford has ground water contamination in three separate watersheds and cannot risk further contamination. Bedford has a water moratorium imposed on them by DEQE and does not permit any new water connections.

The evaluation of candidate options will consider in detail such issues as seasonal elevation of the ground water table; the relationship of the ground water and surface water systems to on-site and off-site recharge and discharge areas and surface water bodies; the proximity and relationship of the site to any sensitive ground-water courses including municipal water supplies and private wells; recharge/discharge rates and flow; identification of drainage patterns; and on and off site surface water bodies and their quality and use.

The MWRA has prime responsibility for water supply and wastewater management in Eastern Massachusetts. Protecting existing or potential water sources is certainly a priority concern in the RMFP process.

Concern was expressed over traffic access to the site.

The transportation/traffic criteria evaluated in the initial Site Screening process of 300+ sites was directed toward evaluating the accessibility of sites as determined by the physical and operating characteristics of the existing transportation system. Within the next phase of site evaluation, transportation systems and routes will be analyzed to determine impacts that residuals facility employee and materials transport could have on the system utilized and on the surrounding communities during both construction and operation.

The Bedford site is only 90 acres compared to the 100 acres that the MWRA is requiring for a landfill. Including the Middlesex Community College expansion, the wetlands, floodplain and privacy buffer there is only 50 acres of land left for the proposed landfill. This land is geographically and technically unsuitable.

The land area requirements for landfilling vary substantially from site to site due to differences in site shape, topography, groundwater and bedrock conditions, and surrounding terrain and land use. These factors determine the amount of land at a site that can be made available for landfilling and the depth of fill that could reasonably be accommodated. The MWRA established a goal of 100 net useable acres for its screening of potential landfill sites, but found few suitable sites that met this size criterion. Three of the five sites selected (MCI Cedar Junction, Bedford, and

Malden/Revere) did not fully satisfy this area goal but were judged to be among the top candidates for a landfill after examining all sites in the site bank of 40 or more acres. The adequacy of any one of these sites to satisfy the MWRA's landfill capacity needs will be evaluated based on site specific information to be collected over the next four to six months. During that same period, means of reducing the volume of materials to be landfilled will be explored.

The site is not partially owned by the Marist Fathers as the report indicated.

The ownership of the Bedford site was based on current accessor records kept by the Town, which in this case were outdated. The site is owned by the Commonwealth of Massachusetts.

Land uses adjacent to the site include the V.A. hospital, college, residential areas, and parks. Middlesex Community College's expansion, enrollment and survival will be threatened by the presence of an MWRA landfill.

The land use evaluation of candidate option alternatives will focus on the compatibility of the proposed use with land use developments, patterns, plans, and trends. As noted in Section 2 of this report, the Middlesex Community College expansion plans will be a serious consideration.

Risk and health effects associated with an RMFP facility to neighboring sensitive land uses such as the Middlesex Community College and residences will also be assessed. From a land use perspective, RMFP siting for landfills will be subject to DEQE regulations which address such issues as minimum distances from the nearest point of refuse deposition to the edge of public roads or conflicting, sensitive land uses.

Due to the residential abutters and poor ventilation because of the valley, the rating should be different.

The Bedford site is currently under consideration as fulfilling the landfill portion of the RMFP project. Now that a technology has been specified for this site, the next effort of site evaluation will be a more comprehensive site-technology review of items such as terrain and proximity of sensitive receptors to identify, for instance, potential odor impacts of a landfill on the surrounding community. The first round of site screening data collection depended upon USGS topographical quandrangles and land use maps for estimating ventilation and impact area characteristics. A more site-specific review will now include on-site surveying, meteorological data review, and more precise location of potentially sensitive receptors.

SITE SPECIFIC:
LYNN

Lynn is not a member of the MWRA district and therefore does not contribute to the Boston Harbor problem. Cooperation from Lynn is limited to worker transportation to Deer Island.

The clean-up of Boston Harbor has regional implications and is not restricted to the MWRA service area. The Lynn site is included in the identification of candidate options due to the need for a second coastal location in the alternatives analysis element of the environmental review. Inclusion of the Lynn site was based on a policy directive of the MWRA Board.

The cumulative impacts of RESCO, the incinerator planned by the Lynn Water and Sewer Commission, and the other manufacturing plants in that section of Lynn must be considered.

The presence of nearby major combustion emission sources whose emission plumes could potentially interact with the residuals facility will be identified and characterized in the next phase of work. Determination of background air quality and dispersion modeling of potentially interacting sources are part of the next phase of activity.

The tidal flats in Lynn Harbor present a difficult navigation problem, and expensive dredging would be required. Rt. 1A is a major traffic artery from the North Shore to Boston and points south and could not handle the additional truck traffic.

Existing channels are shown on USGS maps up to the site border. The next level of analysis will include a detailed evaluation of necessary measures to improve water access. This evaluation will also include a more comprehensive analysis of project impacts on traffic demand on Rt. 1A.

Toxic and hazardous wastes can cause public safety and health problems.

Existing regulations of the state and federal government directly affect the design of incinerators, landfills and compost facilities. These regulations take the form of standards established in part to protect public health. The focus of the regulations is on protection of the public health. MWRA will have to demonstrate compliance with these regulations in the upcoming analyses.

Wetlands bisect and border the site.

Despite the linear wetland which bisects the site, enough usable acreage exists to warrant carrying this Lynn site through further evaluation. The next phase of work will include detailed mapping of on-site and off-site wetlands. Any use of a site by the MWRA which concerns a wetland area will be responsive to both state and federal standards regulating activity in or around wetland bodies.

A large dairy, a fish processing facility and a potato chip company are the neighbors and it may threaten their products. The past and current development agreements and an ENF field in August 1987 include condominium units, commercial space and a hotel with restaurant facilities for the Lynn site area.

The Lynn site is surrounded by a mixture of commercial and light industrial use. Impacts of the proposed facility on existing and proposed nearby uses will be evaluated per the requirements of MEPA.

SITE SPECIFIC:
MALDEN/REVERE

There are nearby coastal wetlands, and salt marsh and estuarine environments.

The wetlands and estuaries within the Rowe Quarry area were identified and documented in the Site Screening Volume II: Results document. The next phase of work will include a more detailed mapping and identification of species and condition of these wetland areas. Any use of a site by the MWRA which concerns a wetland area will be responsive to state and federal regulations for activity in or around wetland or estuarian bodies.

A regional highway system and crowded streets are common to Revere. The Department of works may be realigning Route 1.

The upcoming evaluation will include a detailed evaluation of traffic conditions. Investigative measures such as reducing number of truck trips and timing transportation around peak traffic hours will also be evaluated.

MWRA has been in contact with the Department of Public Works regarding the potential re-routing Route 1. The next level of review will include assessment of any potential conflicts.

The Rowe Quarry site is the smallest total land area among the twelve sites.

The space requirement for landfill sites is more appropriately a volume rather than an area. Sites with existing topography (such as the Rowe Quarry) would permit development of a greater than normal vertical height profile. Significant potential capacity exists due to the depth of the on-going quarry operation.

The site is located among sensitive receptors such as nursing homes, churches, playgrounds, parks, residential areas of Franklin Park, North Revere, and Malden, Revere Beach recreational area and horse and dog tracks.

Existing regulations of the state and federal government directly affect the design of landfills. The focus of the regulations is on protection of the public health. Part of any proposed site plan must include a consideration for buffering neighboring land uses considered sensitive to the RMFP facility operations.

SITE SPECIFIC:
QUINCY

The proposal hazardous waste treatment facility proposed by Clean Harbors must be considered.

MEPA and DEQE have established procedures whereby cumulative impacts associated with nearby existing and proposed uses must be taken into account. The MWRA must adhere to those procedures.

Since it is the last major deepwater property of substantial acreage in Boston Harbor it should be reserved for a water-dependent industry.

Transportation analyses have shown that barge transportation from Deer Island may be the most viable means of moving residuals inland. Residuals management, then, may itself be a water-dependent industry.

The presence of significant quantities of hazardous wastes on the site must be a major consideration.

Much information already exists on the contamination status of the Quincy site and additional research is being completed. Costs associated with remediation of all contamination on the site will certainly be a consideration.

Increased use of the rail line would seriously disrupt traffic in Braintree and Quincy. Fore River Bridge height restrictions may result in extensive traffic delays in Weymouth and Quincy due to the opening of the bridge.

Transportation modes have yet to be firmly established for the residuals program. The Quincy site will also be evaluated in terms of roadways, rail and water as potential transportation systems. Impacts and reliability of utilizing a rail system will be part of the transportation analysis.

The use of the Fore River to transport materials from Deer Island to the Quincy site will necessitate identification of potential impacts associated with the barging of residuals. The analysis will determine bridge lateral and vertical clearances and anticipated barge with load measurements. Predictions of number of barge trips per day indicate 1 to 2 round trips. Scheduling barge trips around peak traffic times would reduce impacts on traffic in Weymouth and Quincy due to the opening of the bridge.

SITE SPECIFIC:
STOUGHTON

CO and TSP are not meaningful measurements for this study, the analysis should look at SO_2, NO_2 trace amounts of heavy metals & other non-regulated contaminants. Brockton reservoir should be considered in dispersion environment (i.e. fall out on reservoir.)

The next phase of review will include a detailed evaluation of the impact area. The presence of significant surface water bodies such as the Brockton Reservoir, will be considered in the air quality analysis.

CO and TSP were part of the initial site screening review because these two parameters vary across the study area in terms of their attainment status. The entire study area is in attainment for SO_2 and NO_2, thus this parameter would not vary across the scoring. The air quality assessment in the next phase must address all pollutants.

DEQE has plans to use Brockton Reservoir in 2 years as public water supply. Beaver Brook-feeds into Brockton Reservoir.

Brockton has submitted preliminary plans for a 0.9 mgd water treatment plant at the Brockton Reservoir. Evaluation of the Stoughton site will include determination of potential impacts on the reservoir via Beaver Brook.

Ecology criteria and scoring should be synchronized with wetlands, surface water and ground water criteria.

Ecological concerns were reviewed as a separate criteria. Ground water, surface water, wetlands, ecological conditions and threatened and endangered species are certainly related; however, they are not uniquely dependent upon each other. In scoring aquatic habitat quality, the water quality classification was used as an indicator.

The screening process used Massachusetts Historical Commission data which is geared to a state and national level of significance; within 1 km of the site, historical resources of local importance exist and an Indian reservation is just north of the site.

The Massachusetts Historical Society cultural and archeological resources data were used to provide a consistent review base for all sites. A detailed assessment of both cultural and archeological public and private records within the town of Stoughton and neighboring lands in Avon will be completed in the upcoming detailed evaluations. Site walkovers will be conducted under MHC review to verify any on-site resources.

Asphalt plant and quarry ledge are conflicting interests to MWRA site development. Conservation area exists within the site boundary (Town Master Plan).

The light industrial warehousing and asphalt operations abutting the site to the west and southwest are considered to be compatible land uses. Site conditions such as depth to bedrock and restrictions they may place on facility construction will be evaluated in the next phase of site review.

There is no indication of conservation land on the Stoughton Site in the Town Assessor records or town land use and zoning maps. Further contacts with town officials are ongoing and may present additional data in this regards.

SITE SPECIFIC:
WALPOLE

The N. Walpole Site is less than 7,200 feet from the area of pumping influence from the Mine Brook Aquifer. The town of Walpole receives 40% of its drinking water from this source. The location of private homeowner wells was not indicated in any of the site screening analysis data collection forms.

During the candidate options evaluation, particular attention will be paid to the presence of aquifers which are used as public water supplies. DEQE regulations stipulate set back distances and technology requirements (liners, leachate collection systems) to ensure aquifers are not impacted. Private wells in the vicinity will be identified in the next period of site review if they were not listed on the DEQE overlays.

One-half of the proposed N. Walpole site (WLP 13/15) is located over primary and secondary recharge areas.

After accounting for recharge areas to the Mine Brook aquifer, adequate acreage remains for the site to be further considered due to the size of the site. During the candidate options evaluation, other secondary data sources and detailed field investigations will be used to identify the quality, yield and depth of groundwater aquifers.

Use of WLP-13/15 threatens the curriculum of the Norfolk County Agricultural High School. An approved Open Space Plan for WLP-07 has been endorsed by the Dept. of Environmental Management.

Impacts of the RMFP program on Norfolk County Agricultural High School will be carefully assessed. Another focus of the candidate options review will include review of conflicting land use plans. Coordination and communication with other

agencies, including DEM, will continue through the program review and implementation.

There is an existing historic mansion, arboretum and Indian artifact treasury on WLP-07. WLP-07 has several historic sites near the site; the Old Twine Factory, and Plimpton Foundary, two Indian Mortor sites and burial grounds and a Colonial Settlement on the site. WLP-13-15 has two historic sites, five Indian grave sites, an Indian alter, and the Isaac Chenery Homestead cellar hole.

The Massachusetts Historical Commission had no records of cultural or archeological resources on WLP-07 or WLP-13/15. Fifteen seperate resources were noted for WLP-07 and one for WLP-13/15 within a kilometer radius to the site. For the next level of assessment, a detailed review of local and private records will be examined for the Walpole sites. Site walkovers, under MHC direction will verify any on-site resources.

The New Boston Edison Plant is located in Walpole. Pollution from trucks traveling on site access routes and prevailing wind patterns have not been considered in the air quality studies. The 100 year mean wind direction is from west to east at 15 mph; therefore, any airborne pollution would be carried into Westwood and Norwood.

The air quality assessment of candidate options will consider background air quality, which includes DEQE monitoring data and major background sources, such as power plants. The new Boston Edison facility would be considered an interacting source for dispersion modeling purposes. The air quality analysis will utilize historical meteorological data deemed appropriate by DEQE and will include evaluation of impacts to neighboring communities.

The 100-year flood zone and Bird Pond are less than 100 meters from WLP-07.

FEMA Flood Insurance Rate Maps provided the data for the initial review of sites for flood potential. The ensuing effort to review this criteria will be augmented by detailed site surveying.

WLP-08 has a great Blue Heron rookery just west of this site and this is an endangered species.

The Massachusetts Natural Heritage Program data bank and maps were reviewed to identify species and especially ecologically important areas that are on-site or within a 1 kilometer radius of the 299 RMFP sites. The great Blue Heron is not on either the federal or state protected species lists as a threatened and endangered fowl. However, protection of environments which accommodate significant habitats will be of prime consideration through the upcoming phase of site analysis.

Rail lines have been inoperable for years and the land is privately owned. Routes 1A, 109 and 135 have peak hour traffic congestion problems.

The candidate options evaluation will focus primarily on the use of existing highways to meet transportation requirements. Where highway related operational impacts appear to be significant, consideration to alternative means of transportation, including rail, will be given. Transportation impact analysis during the evaluation of candidate options will examine access route compliance with design standards set forth by the Massachusetts Department of Public Works. The access roadways must be able to safely support the existing traffic volume plus any added volume attributable to the construction and operation of a facility.

One of the last working farms and county agricultural schools would be obliterated if WLP 13/15 was taken. Residential areas abut WLP 13/15.

Removal of a land use rare to the county such as agricultural would be considered significant, as would disruption of the county agricultural school.

The Site Screening Analysis acknowledged the presence of residential areas next to the WLP 13/15 site. During the evaluation of the candidate options, a thorough analysis of land use patterns will be made to ensure that a residuals management facility will not conflict or interfere with adjoining land uses. Residential areas are paramount in such considerations.

One-fifth of the N. Walpole site is wetland.

The U.S. Fish and Wildlife Service National Wetlands Inventory was used to identify wetlands during the Site Screening Analysis. The candidate options evaluation will map on-site wetlands in more detail, using Massachusetts wetlands delineation criteria. MWRA must adhere to state laws and regulations regarding work within or within 100 feet of a wetland.

SITE SPECIFIC:
WILMINGTON

The Board of Selectman feel that locating the sludge facility in a residential area is an inappropriate use of the land. In fact, the Planning Board has received a site plan from Danco, Corp. for a 48 unit single family home subdivision for the proposed site.

The Wilmington site area is a mixture of residential, forested and commercial warehousing/light industrial use. Part of the proposed site plan would include a consideration for buffering neighboring land uses considered sensitive to the facility operations. This type of specific site plan will be part of the ensuing site evaluation.

Special consideration is essential for developing around wetlands and mitigation measures will be necessary.

The next phase of work will include a more detailed survey mapping of on-site and off-site wetlands. Any use of a site by the MWRA which concerns a wetland area will be responsive to both state and federal regulations for activity in or around wetland bodies.

Rodent and insect problems which could arise may create unsanitary conditions for the areas surrounding the facility.

Existing regulations of the state and federal government directly affect the design and operation of landfills. Measures to control vectors (insects and rodents) will be addressed in the upcoming environmental assessments.

Truck traffic over residential streets raises questions of public safety and road maintenance.

The physical condition of roads and determining operation capacities are key issues associated with establishing a

successful residuals management plan. These concerns will be addressed in detail in the next phase of analysis. Available mitigation measures include creating a vegetative buffer around staging areas, reducing the number of necessary residual transport vehicles and scheduling the truck transport operation around peak traffic hours.

The proposed composting and/or combustion facility is located near groundwater recharge areas for three town wells. While groundwater for the most part appears to flow away from the wells, some groundwater may flow in the direction of the wells.

There are numerous state and federal regulations to which any MWRA project element will have to adhere to regarding groundwater and surface water protection. The following period of site evaluation will consider in greater detail such issues as the relationship of the groundwater systems to on-site and off-site recharge and discharge areas, the recharge and discharge rates and flows, and the proximity and relationship of the site to any sensitive ground water courses including municipal water supplies and private wells.

SITE SPECIFIC:
WINTHROP/BOSTON

Point Shirley and Cottage Hill fall within 3 km of the site. Existing sludge processing odor problems and the planned secondary treatment facilities have not been factored in.

Particular to Deer Island, a technical analysis of the future odor concerns associated with the potential combination of facility activities on Deer Island will be undertaken in the upcoming evaluations.

Land area requirements rule out Deer Island for compositing and air quality considerations rule out incineration. Logan Airport must also be a consideration when looking at air quality.

Preliminary layouts prepared by the Authority's Secondary Treatment Facilities Plan (STFP) consultant and coordinated with the RMFP consultant indicate that the acreage available in Deer Island for residuals handling facilities is in the range of 20 acres at the southern end of the island. The next level of work will include formalization of the STFP layouts and a refinement of exact acreage values available to the residuals program.

The next level of air quality evaluation will include detailed dispersion modeling of projected emissions. Background air quality conditions, including those created by Logan Airport, will be included in the analysis.

The 20 acres at the southern end of Deer Island should be used or reserved for uses other than residuals management.

Federal and state regulations require that the MWRA explore and evaluate a reasonable range of alternatives in developing a plan for future residuals management. Despite the Board of Directors' previously stated preference for processing of residuals at some location other than Deer Island, the Authority concluded in discussions with DEQE and EPA that it

was obligated to evaluate the option of on-island residuals processing along with options involving processing elsewhere. In coordination with the Secondary Treatment Facilities Planning effort, 20 acres has been allotted for residuals management activities at Deer Island. At other potential processing sites, the Authority is evaluating the effects of siting composting facilities, combustion/heat drying facilities, or both. At Deer Island, the 20 acres available appears to be sufficient to accomodate either process but not both. Even those options involving processing at off-island locations, however, will require some support facilities on Deer Island such as sludge thickening, storage, and digestion facilities. Without these facilities to receive and prepare sludge for transportation off-island, the reliability of the Deer Island wastewater treatment facilities could not be assured.

Visual impacts should be a part of the site evaluation criteria.

The next level of field work will include visual impact analysis. This analysis includes evaluation of the extent to which the project will be visible from sensitive vantage points or to large numbers of people, the extent to which the facility will be the dominant feature in the landscape, and the extent to which the project may diminish visual access to the water front or other scenic areas.

Transportation impacts associated with the RMFP would reduce Deer Island's suitability for sludge processing.

Barging will likely be the primary transportation mode associated with use of Deer Island. The next phase of the residuals program evaluation will include a more thorough understanding of the physical conditions and operating capacities associated with transportation needs.

Cumulative noise impacts of construction activities at DI has not been considered.

The physical location of the existing noise sources in relation to noise-sensitive land uses enabled the first phase of site screening to determine potential impacts in the surrounding area to Deer Island.

The next level of site evaluation will include measurement of existing noise levels and evaluation, using attenuation modeling, of impacts of facility construction as well as operation.

Spectacle Island is currently included in the Boston Harbor Island State Park plan for use as a recreational facility. Spectacle Island is also a possible disposal site for excavation material from the THT/Central Artery Project. Proper disposal and care will make Spectacle Island part of the state park system.

If the DPW selects Spectacle Island as its excavation material disposal site, the timing of that effort will have to be taken into account in the candidate options evaluation phase of the RMFP. Spectacle Island is not unique in that there are development proposals, plans, or ideas for most of the currently undeveloped parcels throughout the service area. Competing development proposals will be identified as part of the upcoming evaluation.

APPENDIX A

REVIEW COMMENT SUBMITTERS

(Note: The parties identified in Appendix A represent agencies, elected officials and citizen groups who provided review comments on the siting and candidate options reports either through the MEPA public comment period or the MWRA public informational meetings.)

State and Federal Agencies, Representatives and Organizations

- Environmental Protection Agency:
  - Gwen Ruta
  - David Fierra

- Department of Environmental Quality Engineering:
  - Patricia Donahue
  - Amy Keith
  - Richard Chalpin
  - Tom C. McMahon
  - Paul A. Taurasi
  - Ronald D. Lyberger

- State Senators, Congressmen and Representatives:
  - David Magnani
  - John A. Businger
  - Marjorie A. Clapprood
  - Willian R. Keeting
  - John Joseph Moakley
  - Alfred E. Saggese
  - Nicholas Marvoules
  - Larry Chretien (for Representative Brownell)
  - Paul D. Harold
  - William Golden
  - Joseph D. Early
  - Barbara Gardner
  - Edward Burke
  - Marie Parente
  - Michael LoPresti
  - James Miceli
  - Carol C. Amick
  - Augusto Grace

- Robert Cerasoli
- Michael Morrissey
- Ed Markey
- Barney Frank
- Arthur Lewis
- Frank Woodward
- Gregory Sullivan
- Francis D. Doris
- Gus Serra
- Walter Boverini
- Steven Angelo
- Vincent Lozzi
- John Brennan
- William Reinstein
- John McNeil
- William Wall

- Facilities Planning Citizens Advisory Committee:
  - Emylie DiMento
  - L.A. Schafer
  - Elizabeth Johnson (Massachusetts Audobon Society)

- MWRA Advisory Board:
  - Norman Jacques

- Massachusetts Area Planning Council:
  - David C. Soule
  - Richard Lombardi
  - Richard Joly
  - Carol Richmond
  - Frank Stringi
  - Albert Porter

Town/City Departments and Representatives

- Paul N. Anderson, Commissioner of Public Works, City of Quincy
- Arnold Baker, Chairman of the Board of Selectmen, Ashland
- JoAnn Blomstrom, Stoughton Selectman
- Polly Bradley, President, Nahant SWIM
- Denise K. Breiteneicher, City of Boston, Environment Department
- Holly Guy Buckosi, Ashland Advocates for a Clean Environment
- Bob Bush, Winthrop Chamber of Commerce
- Bruce Campbell and Associates, Inc. (Transportation Gas and Planners)
- Fred Campbell, Citizen Advisory Commission, Walpole
- John Campbell, Chairman Walpole Citizens Advisory Commission
- Michael T. Cheney, City Councillor, City of Quincy
- Joseph M. Clements, Chairman, Stoughton Planning Baord
- Roy Cohen, Stoughton Selectman
- Coalition of Concerned Citizens (No Signature)
- Norman Cole, City Councillor, Lynn:
  - Councillor Harry Coppala
  - Councillor Patrick McManus
  - Councillor Edward Clancy
  - Councillor Joseph Scanlon
- George V. Colella, Mayor, City of Revere
- Paul J. Connors, Randolph Board of Selectmen
- James S. Conway, Mayor, City of Malden
- Kevin Costello, South Shore Chamber of Commerce
- Marjorie Crispin, Chairman Braintree Board of Selectmen
- Mr. DeCasaldi, Hopkinton Board of Appeals
- Robert A. Deleo, Chairman, Winthrop Board of Selectman
- John DeMarco, Chairman, Avon Board of Selectmen

- Albert DiVirgilio, Mayor City of Lynn
- Harlan M. Doliner
- Ralph R. Willmer McGregor, Shea and Doliner - Representing Legal Counsel Winthrop
- Thomas Dunn, Chairman Westwood Board of Selectmen
- ERM Group/New England - Consultants to Stoughton
- Phillip J. Farrington, Town Manager, Stoughton
- Dr. Henry Fassler, Chairman of the Board of Health, Ashland
- John Festa, City County Council, Revere:
  - Councillor, Robert Haas
  - Councillor, Pat Tata
  - Councillor, Anthony Conte
  - Councillor, Kenneth Hill
  - Councillor, Richard Penn
  - Councillor, John Jordon
  - Councillor, Rita Singer
- Jane Gallahue, Commission of Public Health, Quincy
- Richard H. Galney, Chairman, Ashland Sewer Committee
- Jim Galvin, Braintree Selectman
- Kevin Geaney, Director Lynn City Planning
- Sarah Gillies, Braintree Selectman
- John W. Giorgio, Kogselman and Paige, P.C. (Legal Counsel for Walpole)
- Carol Goldman, Bedford Board of Selectmen
- Peg Goudy, Weymouth Selectman
- S. David Graber, Consulting Engineer for Town of Winthrop
- Thomas Groux, Dean of Administration for Middlesex Community College
- Ellen Hafner, Manet Community Health Center, Quincy
- Bill Hamilton, Walpole Board of Selectmen
- James Hennessey, City Council President, Malden
  - Councillor John Coakley
  - Councillor Margaret Boyle
- John P. Hinckley, Chairman, Hopkington Board of Selectman

- Dr. Curtis Hoffman, Dept. of Sociology and Anthropology, Bridgewater State College
- James E. Houlihan, President, Middlesex Community College
- Luisa H. Holden, ERM Group
- Steve Hunt, Executive Director, Diane Wood and Kathryn Benjamen, Save the Harbor, Save the Bay
- IEP Associates (consultants to Walpole)
- Joseph P. Joseph, Old Colony Overall Economic Development Program
- Don Keller, Winthrop Hospital, Inc.
- James Kelly, Boston City Councillor
- Mary Kelley, Winthrop Conservation Commission
- John J. Kowalczyk, Chairman Stoughton Board of Selectmen
- William Kyriakakis, Lynn Office of Economic Development
- Leon Lataille, Mabbett, Cappaccio & Associates
- Robert D. Logcher (Consultant to Town)
- John Losh, Holliston Board of Selectmen
- John Lyons, Winthrop Selectmen
- Francis X. McCauley, Mayor, City of Quincy
- Mike McCulloch, Chairman, Board of Selectman, Bedford
- Michael McHugh, Bedford Conservation Commission
- Daniel McGarry, Stoughton Selectmen
- Stephen McGrath, President Quincy City Council:
  - Councillor Nutley
  - Councillor Michael Cheney (Nut Island)
  - Councillor Patricia Toland
  - Councillor Joseph LaRaia
  - Councillor DeCristofaro
- Tom McNiff, Winthrop Citizens Advisory Committee
- Joseph McRitchie, City Soliciter of Quincy
- James R. Merriam, Town Administrator, Walpole
- Salvatore Migliaccio, Lynn Chamber of Commerce

- Marilyn Morris, Exec. Secretary, Norfolk Town Board of Selectman
- Salvatore Migliaccio, President of Lynn Chamber of Commerce
- Dick Morris, Director Norfolk County Agricultural High School
- Richard C. Morse, Director, Norfolk Co., Ag. High School
- George Murray, Chairman, Norfolk Board of Selectman
- Elizabeth Nashawarty, Walpole Planning Board, Chairman
- Robert Noonan, Selectman, Winthrop
- David W. Oblas, Chairman of Bedford Board of Health
- Harold Paul - Walpole Citizens Advisory Commission:
  - Fred Gallant
  - Frank Cittola
  - Gary O'Neil
  - Brad Willard
- Everett Penney, Director of Public Health, Town of Andover
- Fred Pfischner, Norfolk Board of Selectmen, Chairman
- Scott Poole, Chairman Lynn Water and Sewer Commission
- Thomas Riolo, Norwood Board of Selectmen, Chairman
- Ann Rogers, Nutter, McClennan and Fish
- Dr. Barry Ruthfield, Superintendent Ashland Schools
- L.A. Schafer, Newton Representative, FDCAC (Community Org.)
- SEA Consultants (Ashland, for Water and Sewer)
- Arthur Shapiro, Ashland Technical Committee Chairman
- Robert R. Sherman, Executive Secretary/Administrator Town of Braintee
- Larry Simeone, Revere Planning Board
- Arthur Smith, Water and Sewer Commissioner, Wilmington
- Reginald S. Stapczynski, Town Manager, Wilmington
- James Stewart, Board of Selectman, Wilmington
- Edward M. Sullivan, Vice-Chairman Canton Board of Selectmen
- Joseph Sullivan, Braintree Selectman
- Michael Sullivan, Medfield Town Administrator

- Edmund Tarallo, Malden City Planner
- Mike Toomey, Lynn Conservation Commission
- Town of Norfolk, Board of Selectman, Executive Secretary and Chairman
- Stan Usovicz, Lynn Office of Economic Development (Enclosures)
- Thomas G. Waldstein, Esq. et al, Landfill Advisory Committee
- Walpole Board of Health:
  - Mary Dolan-Capciole
  - Donnel Murphy
  - Richard Gicisti, Clerk
  - Carol Michetti
  - Susan Fitzgerald
  - George W. Young, Jr.
- Walpole Citizens Advisory Committee
- Jack Walsh, Nut Island Citizens Advisory Commission
- Fred Winsmen, Ashland Board of Selectmen
- Robert A. Weimar, President, Normandeau Assoc. (Consult. to Revere)
- Charles Yaitanes, Soughton Selectmen
- Clara Yeomans, Conservation Commission, Quincy
- Frank Zarba, Park Improvement Association

SUMMARY OF COMMENTS
SUBMITTED BY RESIDENTS

Town	Number
Ashland	485
Bedford	59
Lynn	4
Malden/Revere	282
Quincy/Braintree	10
Stoughton	175
Walpole	57
Wilmington	0
Winthrop/Boston	6

APPENDIX B

CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS ON THE SPECIAL PROCEDURE REPORTS

The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, Massachusetts 02202

MICHAEL S. DUKAKIS
GOVERNOR

JAMES S. HOYTE
SECRETARY

December 2, 1987

CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS
ON THE
SPECIAL PROCEDURE REPORTS

PROJECT NAME	: Residuals Management Facility Plan Draft Report on Candidate Options Identification
PROJECT LOCATION	: Statewide
EOEA NUMBER	: 5832
PROJECT PROPONENT	: MWRA
DATE NOTICED IN MONITOR	: September 11, 1987

The Secretary of Environmental Affairs herein issues a statement that the Special Procedure Reports submitted adequately and properly comply with the Massachusetts Environmental Policy Act (G.L., c.30, s.61-62H) and with its implementing regulations (301 CMR 11.00).

The Candidate Options Identification Reports are part of a "Special Procedure for a Major and Complicated Project "known as the Residuals Management Facilities Plan". The reports under review at this time include the following:

- o Candidate Options Identification
- o Site Screening Analysis Vol. I, Methodology
- o Site Screening Analysis Vol. II, Results.

The Residuals Management Facilities Plan (RMFP) is one of a number of related activities leading to the clean up of Boston Harbor. The Special Procedure process builds on previous work which evaluated existing conditions, projected future conditions, and the like. The primary goal of the RMFP project is planning for the long term collection, processing, transportation, and disposal and/or beneficial reuse of residual materials from MWRA's wastewater treatment facilities that serve the greater Boston area.

Four reports (which are a part of this Special Procedure) have been prepared to serve as "building blocks" for the Draft Report on Candidate Options. These reports are:

1. Characterization of Residuals (3/87)
2. Assessment of Technologies (2/87)
3. Assessment of Transportation Alternatives (2/87)
4. Site Screening Analysis (currently under review herein).

The results of the information generated by the above four reports formed the basis of the Draft Candidate Options Identification (currently under review herein). This report formulated residuals management alternatives (including specific sites) for further upcoming detailed engineering and environmental analysis under the Special Procedure.

In terms of the Site Screening Analysis Vol. 1, Methodology and Site Screening Analysis Vol. II, Results, I have found those documents to be adequate to the task at hand. In the Special Procedure outline for this report, I required reexamination of approximately 200 sites (identified in previous studies), identification of new sites which may have been overlooked, screening of sites independently of the technology assessment, and that coastal, inland and island sites be screened equally for all potential technology blocks. Ultimately, 299 potential sites within the MWRA service area were identified and subsequently evaluated according to specific weighted site screening criteria. These criteria were developed to enable relative comparisons of the entire "universe" of sites based on their ability to accommodate a residuals management facility, independent of any particular technology. The result was an ordered listing of the 299 sites (Tier I screening). The next phase imposed technology and land area requirements and produced a further ordered list by land use functions (Tier 2 screening) for transfer, combustion, composting, and landfill functions. An additional screening was conducted for development status, geographic compatibility and permitting obstacles. Ultimately, 12 candidate sites were identified to be evaluated with technologies. These sites consisted of:

- 2 island processing sites
- 3 coastal processing or transfer sites
- 3 inland processing sites
- 5 landfill sites.

These sites are located in the communities of: Boston, Lynn, Quincy/Braintree, Stoughton, Walpole, Wilmington, Ashland, Bedford, and Malden/Revere.

A great number of comments were received on this aspect of facility siting from individuals, local officials, state and federal elected officials and regulatory agencies. It is clear from these comments that no site is without potential environmental impacts. It is my opinion, however, at this point in the review process that the preliminary environmental screenings to date should not automatically preclude further review of any of the 12 candidate sites. The comments received provide a great deal of site specific data that can be used in the indepth engineering and environmental analysis that will follow. Upon the indepth review of the 12 candidate sites, further information may then become apparent so as to narrow the candidate sites still further.

In regard to Draft Report on Candidate Options Identification, my review also found this document to be adequate. Each candidate option is a unique combination of technologies, site, and transportation modes. Based on a series of assessments, seven (7) "most promising" system alternatives were identified. Coupled with the consideration of alternative coastal transfer sites and processing site locations, some 31 total candidate options have been identified. These will be the subject of detailed studies in the upcoming Candidate Options Evaluation. The results of the Candidate Options Evaluation will be the selection of one or more preferred alternatives by the MWRA Board of Directors, and preparation of draft Environmental Information Document (EID), Facility Plan, and Environmental Impact Report (EIR).

Following my review of the regulatory agency comments, it is clear that the MWRA must continue to meet with the U.S. EPA and the DEQE to resolve a number of outstanding concerns. In regard to EPA's specific comment concerning air quality, it is suggested that a preliminary air quality modeling be done to assess potential non-attainment of air quality standards that could preempt a site. Such a preliminary analysis may be helpful and ultimately time saving.

Both the EPA and the DEQE suggest additional consideration be given to a heat drying process for sludge. I concur that this technology be considered.

Some comments received suggested that multiple sites be employed. While the Draft Candidate Options Report did not specifically identify this type of option (there are probably hundreds of possible combinations), the report did not preclude such options in the future. It should be noted, however, that splitting up land use functions may not necessarily reduce the potential impacts by the number of sites - for example, two landfills may not mean that the impacts will be reduced by 50% at

a given site. This is due to a number of factors, including necessary minimum infrastructure to support various residuals management facilities.

The MWRA Advisory Board submitted a very interesting set of comments. Two of their suggestions were particularly unique and deserve further consideration. First, a public relations and education program was suggested. As those served by the MWRA are facing higher fees, and as we continue to tax our infrastructure and environment, the MWRA can play a valuable role in educating the system users. Such an idea has merit and should be considered by the MWRA. Second, "incentives" for the location of regional facilities in the preferred site communities should be considered in the further studies. In many cases, such "incentives" might be more commonly referred to under MEPA as "Mitigation Measure". Mitigation must play an intergrel role in upcoming evaluations.

In summary, I have found the Site Screening and Draft Candidate Options Identification Reports to be adequate and allow the review process to proceed. Difficult decisions remain ahead. Even the best of decisions will not be popular. I trust that the level of thoughtful public input will remain high and the review of the substance and facts related to this important element of Boston Harbor's clean up effort will remain on track.

December 2, 1987
DATE

JAMES S. HOYTE, SECRETARY

JSH/JD/bk